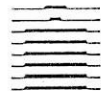

XE-100A

This equipment complies with the requirements in Part 15 of FCC Rules for a Class A computing device. Operation of this equipment in a residential area may cause interference in which case the user will be required to take whatever measures may be necessary to correct the interference at his own expense.

NOTICE



Denver Instrument Company

Electronic Balance Operating Instructions

600764.2

Read all instructions prior to operating your balance!
Remember, this is a precision weighing instrument and
should be handled with care.

NOTICE

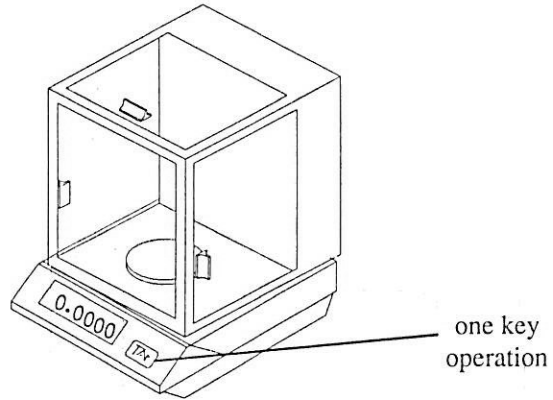
Strict compliance with all warranty stipulations must be maintained or warranty service will be voided. Repair or internal adjustments performed by unauthorized personnel may cause serious damage and will void the warranty.

For your reference and protection, record:

Model Number _____
Serial Number _____
Purchase Date _____

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Specifications

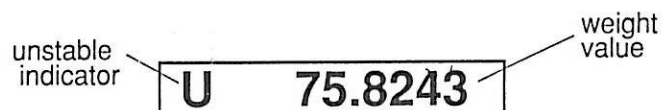
Model 100A

- Capacity 100g
- Sensitivity 0.0001g
- Repeatability2mg
- Linearity \pm .2mg
- Electrical Requirements 115/230 vac 50/60 Hz
- Response Time 5 seconds (typical)
- Pan Diameter 3.25" (8.25 cm)
- Weight 12 lbs.
- LCD Display
- One key operation
- RS-232 Bi-directional Interface
- Automatic Calibration

Unstable Indicator

Always make sure your balance reading is stable before and after each step of your weighing operation.

The letter *U* appears on the left side of the display whenever the balance reading or weight is **not** stable. It disappears when the reading becomes stable.



Taring

Briefly pressing the **Tare** key always zeroes the balance.

0.0000

If the balance is unstable, the display shows until the balance becomes stable, and then it tares.

0.0000

Balances have tare capabilities up to their total weight capacity. (For the specifications for the **100A**, see page 3.)

Basic Weighing

When powered up, your balance displays the weight in grams. Eight additional weigh modes are available through the RS-232C interface. (See the I/O section on page 18.)

To weigh a sample:

- | | |
|---|----------|
| 1. Place the sample on the weighing pan. | U X.XXXX |
| 2. Wait for the unstable indicator (<i>U</i>) to disappear. | X.XXXX |
| 3. Record the weight value shown on the display. | X.XXXX |
| 4. Remove the sample. | 0.0000 |

To weigh a sample using the Tare Procedure:

To weigh a sample in its container with the display showing the actual weight of only the sample, use the following Tare Procedure:

Basic Weighing

- | | |
|---|--------|
| 1. Place the container on the pan and wait for the unstable indicator (<i>U</i>) to disappear. Display shows | X.XXXX |
| 2. Press the Tare key. Display shows | ----- |
| then | 0.0000 |
| 3. Now place the sample in its container on the pan. | X.XXXX |

The balance automatically subtracts the weight of the container from the sample value so that the display shows only the actual weight of the sample.

All balances are calibrated at the factory prior to shipment. However, you should calibrate your balance **before** using it for the first time, and you should periodically check calibration to ensure accuracy. We recommend that you check the calibration once a week or whenever the balance has been moved or excessive temperature variations have occurred.

Use one of the permissible calibration weights listed below. We recommend that calibration be performed using the maximum permissible weight.

Permissible Weights
(grams)

- 20
- 30
- 50
- 100

Automatic Calibration

To calibrate:

1. Hold down the **Tare** key (approximately 3 seconds) until the display shows

CAL

2. Place a permissible weight on the pan.
Display shows
(using a 30g weight)

CAL -30- *

3. When calibration is complete, the display shows

30.0000

or

no CAL

4. Remove weight.
When balance is stable, return to your normal weighing operation. Display shows

0.0000

Calibration Procedure

If the display shows **no Cal**, check the Troubleshooting Section on page 28 for possible solutions.

* If the display continues to show **CAL -30-**, the balance is **not** able to stabilize. Check the Troubleshooting Section on page 28 for possible solutions.

NOTE

Improper connections to the I/O connector may result in damage to the balance!

I/O Specifications

I/O connector: RJ11, 4 pin.

Pins used:

PIN # FUNCTION

- | | | |
|---|--------------|--|
| 1 | Case Ground: | Tied to earth ground through the power cord. |
| 2 | Data Input: | Voltage input compatible with RS-232C levels, nominal 3000 ohms input impedance, ± 5 volt minimum swing, ± 20 volts maximum voltage. |
| 3 | Data Output: | Voltage output compatible with RS-232C levels, 300 ohm source resistance and ± 10 volt swing minimum. |
| 4 | Tare. | |

Interface Applications

Cable Length: 25 feet maximum.

Baud: Variable baud (from 110 to 9600) in standard ASCII format. Baud from 110 to 4800 have less than 1% error factor. A baud of 9600 is approximately 5% slower and may not work with some peripheral equipment.

300 is default

Output Specifications

The 100A uses a level compatible RS-232C interface, with 8 data bits, null parity, and two (2) stop bits. The balance transmits two (2) start bits and can receive one (1) or two (2) stop bits.

The function and value displayed on the balance is output in the form:

$F < \pm > VVVV.VVVV < cr > < lf > < NULL >$

where F is the function number, $< \pm >$ is the sign, VVVV.VVVV is the value displayed, $< cr >$ is a carriage return, $< lf >$ is a line feed, and $< NULL >$ is string termination character. The output only occurs when the balance has stabilized. The balance outputs either after it has stabilized or by using the print command (?#).

Interface Applications